

1, 3-16, 18-25

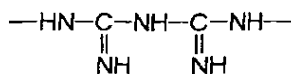
Application No. 10/070,152  
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**Amendments to the Claims:**

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

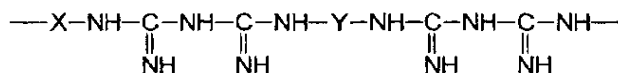
1. (Currently amended) An antimicrobial polymeric biguanide, ~~polymer, characterised in that it carries~~ said polymeric biguanide carrying a covalently bound chromophoric marker.
2. (Cancelled).
3. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 wherein said chromophoric marker comprises a chromophoric group which has a major absorption and/or emission band in the range of from 275 to 1500 nm.
4. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 wherein the chromophoric group is a fluorescent group.
5. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 wherein the chromophoric marker is covalently bound to the antimicrobial ~~polymer~~ polymeric biguanide as a pendant group or a terminal group on the polymer chain, or as an in-chain group in the polymer chain.
6. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 wherein the chromophoric marker is present as a terminal or pendant group on the polymer chain ~~and the antimicrobial polymer to which the chromophoric marker is bound is an antimicrobial poly(quaternary ammonium) compound, a polymeric guanide or a polymeric biguanide.~~
7. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 6 wherein the antimicrobial ~~polymer~~ polymeric biguanide to which the chromophoric

marker is bound is a polymeric biguanide which contains at least one biguanide unit of Formula (3):



Formula 3

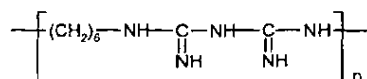
8. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 7 wherein the polymeric biguanide is a linear polymeric biguanide which has a recurring polymeric unit represented by Formula (4):



Formula (4)

wherein X and Y may be the same or different and represent bridging groups in which, together, the total number of carbon atoms directly interposed between the pairs of nitrogen atoms linked by X and Y is not less than 9 and not greater than 17.

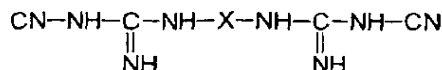
9. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 8 wherein the polymeric biguanide is a mixture of poly(hexamethylenebiguanide) polymer chains in which the individual polymer chains, excluding the terminal groups, are represented by Formula (5) and salts thereof:



Formula (5)

wherein the value of n is from 4 to 40.

10. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 obtainable by co-polymerising a chromophoric marker, a bisdicyandiamide having the formula:

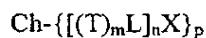


and a diamine  $H_2N-Y-NH_2$ , wherein X and Y are ~~as defined in claim 8~~ may be the same or different and represent bridging groups in which, together, the total number of carbon atoms directly interposed between the pairs of nitrogen atoms linked by X and Y is not less than 9 and not greater than 17.

11. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 10 obtainable by co-polymerising hexamethylenediamine, hexamethylene-1,6-bis dicyandiamide and a chromophoric marker.

12. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 wherein the covalent bond between the chromophoric marker and ~~polymer~~ the polymeric biguanide is formed by means of one or more reactive functional group on the chromophoric marker which is capable of forming a covalent bond with the ~~polymer~~ polymeric biguanide and/or monomer precursors used to make the ~~polymer~~ polymeric biguanide.

13. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 12 wherein the chromophoric marker carrying the reactive functional group(s) is of the Formula (1):

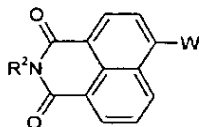


Formula (1)

wherein:

- |                |   |
|----------------|---|
| Ch             | is a chromophoric group;  |
| L              | is a divalent aliphatic linking group;  |
| X              | is a reactive functional group;   |
| T              | is -O-, -S-, -NR <sup>1</sup> -, -NR <sup>1</sup> C(O)NR <sup>1</sup> -, -NR <sup>1</sup> C(S)NR <sup>1</sup> -, -NR <sup>1</sup> C(O)-, -OC(O), =N- or -SO <sub>2</sub> NR <sup>1</sup> -; |
| R <sup>1</sup> | is H, optionally substituted alkyl or optionally substituted phenyl;  |
| m and n        | independently are 0 or 1; and   |
| p              | is 1 or 2.  |

14. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 13 wherein the chromophoric marker carrying the reactive functional group(s) is of the Formula (2):



Formula (2)

wherein:

W is -NR³R⁴, -OR⁵ or halogen;

R², R³ and R⁵ are each, independently, alkyl optionally substituted by a reactive functional group;

R⁴ is H or alkyl optionally substituted by a reactive functional group;

provided that at least one of R² R³ R⁴ or R⁵ is substituted by a reactive functional group.

15. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 14 wherein the chromophoric marker carrying the reactive functional group(s) is N-(6-aminohexyl)-4-(6-aminohexylamino)-1,8-naphthalimide, N-(6-aminohexyl)-4-methoxy-1,8-naphthalimide, N-(6-aminohexyl)-4-bromo-1,8-naphthalimide or N-hexyl-4-(6-aminohexyl)-1,8-naphthalimide.

16. (Currently amended) An antimicrobial ~~polymer~~ polymeric biguanide according to claim 10 obtainable by co-polymerising hexamethylenediamine, hexamethylene-1,6-bis dicyandiamide and 4-bromo-1,8-naphthalic anhydride.

17. (Cancelled).

18. (Currently amended) A composition comprising antimicrobial polymers at least one of which is an antimicrobial ~~polymer~~ polymeric biguanide according to claim 1.

19. (Currently amended) A composition comprising a carrier and an antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 ~~or a composition according to claim 18.~~

20. (Currently amended) A method for inhibiting microbiological growth on, or in, a medium which comprises treating the medium with an antimicrobial polymer according to claim 1 ~~or a composition according to claim 18.~~

21. (Currently amended) A method for detecting an antimicrobial ~~polymer~~ polymeric biguanide according to claim 1 on or in a medium comprising ~~the steps:~~

- (a) subjecting a sample of the medium containing ~~an said~~ antimicrobial polymer polymeric biguanide to a detection means whereby the presence of the chromophoric marker in the antimicrobial polymer generates a detection signal; and optionally
- (b) calculating the concentration of the antimicrobial ~~polymer~~ polymeric biguanide from the detection signal generated in step (a).

22. (Original) A method according to claim 21 wherein the detection means comprises fluorescence spectrometry, Raman spectrometry or surface enhanced resonance Raman spectrometry.

23. (Currently amended) A method for maintaining the concentration of an antimicrobial ~~polymer according to claim 1~~ polymeric biguanide carrying a covalently bound chromophoric marker in a medium at or above a target concentration comprising ~~the steps:~~

- (a) measuring the concentration of the antimicrobial polymer in the medium using the method according to claim 21;
- (b) comparing the measured concentration with the target concentration; and
- (c) adding a sufficient quantity of further antimicrobial ~~polymer~~ polymeric biguanide to the medium to maintain the concentration of the antimicrobial ~~polymer~~ polymeric biguanide in the medium at or above the target concentration.

24. (New) A composition comprising a carrier and a composition according to claim 18.

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25. (New) A method for inhibiting microbiological growth, on, or in, a medium which comprises treating the medium with a composition according to claim 18.